User revealment revisited

Knowledge formation in the prefocus stage of information-based work tasks

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Abstract

In this study I address the following three questions: How do students formulate their information needs in the early stage of their information-based work tasks? How can students benefit from their teachers' terminological competence? How do students' learning styles affect their formulation behaviour?

The aim of this thesis has been to investigate how students gradually become more aware of their information needs during their work task process, specifically during the prefocus stage, before they have formulated a topical focus. The process of students clarifying their information needs was called *cognitive user revealment*. It was explored whether – and how – students might benefit from teachers' terminological understanding of a topical area, as well as how students' learning styles affect their formulation behaviour. The research topic has been explored with an interdisciplinary perspective, using information searching theory, cognitive linguistic theory, and cognitive psychological theory.

Elaborating information needs is a process of knowledge formation in which students have to activate their vocabulary and relate new ideas to their own current knowledge. This involves the handling of information which is not yet integrated as meaningful knowledge, due to the 'knowledge gap' actualized by the task requirements. An increased understanding of students' information need formulation behaviour has consequences for system design, as well as information literacy training.

An associative semantic network of pedagogic terminology was compiled from teachers' word associations and descriptions of relationships between word pairs. This tool was used in a one-hour laboratory test session with students from educational science, elaborating on an assigned work task in several terminological steps. The students organized their work tasks and arrived at tentative search terms – first on their own, and afterwards using the associative semantic database compiled for this study.

The outcome of the analysis shows that students benefit from using a semantic tool in the prefocus stage of their work tasks, as a trigger for the activation and enrichment of their own knowledge. This is especially true for students with a *deep* learning style, who exhibit an ability to formulate their work tasks with a rich vocabulary, also on their own. For a semantic tool to be useful in the prefocus stage, students have to acquire learning strategies characterized by a thoroughness in the way they approach the work task process. This

includes terminological elaboration of their information needs prior to search system interaction.

The results of the analysis have been discussed in light of the digital learning context of 'the Google generation'. A semantic tool of the kind piloted in this study should be available on the digital platforms students apply, and be used in bridging the gap between the students' own vocabulary and the terminology used in information available on the Web.

In relation to the research questions, the findings can be summarized as: The variation in students' formulation of information needs is related to prior knowledge of the work task, degree of deep learning style, and previous studies in pedagogy. Most students benefit from their teachers' terminological competence by using an associative semantic tool in the prefocus stage of their work tasks for enriching their own brainstorm. Students with a high degree of deep learning style also used the semantic tool in the revision of search term candidates – either as a trigger in the reactivation of their own vocabulary, or as an input for new tentative search terms. When students with a high degree of deep learning style select many terms from the semantic tool in the reformulation of tentative search terms, they have already exhibited a large self-produced vocabulary on their own.

Activated current knowledge enhances students' abilities in information need formulation. This can be stimulated by the use of associative semantic tools, as well as by an increased digital literacy among students.

Key words: information needs, information searching, information behaviour, learning styles.